

1 [0069] ABSTRACT OF THE DISCLOSURE

2 [0070] A vapor phase deposition method and apparatus for the application of thin
3 layers and coatings on substrates. The method and apparatus are useful in the fabrication
4 of electronic devices, micro-electromechanical systems (MEMS), Bio-MEMS devices,
5 micro and nano imprinting lithography, and microfluidic devices. The apparatus used to
6 carry out the method provides for the addition of a precise amount of each of the reactants
7 to be consumed in a single reaction step of the coating formation process. The apparatus
8 provides for precise addition of quantities of different combinations of reactants during a
9 single step or when there are a number of different individual steps in the coating
10 formation process. The precise addition of each of the reactants in vapor form is metered
11 into a predetermined set volume at a specified temperature to a specified pressure, to
12 provide a highly accurate amount of reactant.